PRSG[55] and Anchorage[56] recommended time-out timers to limit the continuous transmitting time of FRS transmitters. Based on extensive GMRS experience, we believe that this limit should be set at no more than 60 seconds. FRS hardware should encourage rapid turn-around and sharing, and should discourage the kind of long-winded transmissions more typical of hobby and chit-chat communications.

PRSG and several other parties[57] recommended that an FRS radio transmitter not be enabled until any receiver muting has been *disabled*. PRSG believes further that the procedure to monitor "open squelch" (with all receiver and selective-address muting defeated) must be accomplished in a manner that assures *meaningful pre-transmission monitoring*. PRSG recommends that the effort to switch to "open-squelch" monitoring must be easy for FRS operators of all ages and all levels of physical dexterity, but must not be merely a minor ergonomic extension of the FRS operator depressing the push-to-talk button.

Furthermore, PRSG believes that a return of the FRS transceiver to a *receiver-muted* condition should require a *deliberate action* by the station operator. Once the receiver-muting has been disabled and after the FRS station has transmitted, a return to a muted condition should *not* be automatic.

Boakes and Tumser recommended requiring a "transmitter lockout function" that would prohibit FRS transmission if the frequency was in prior use. They cited a similar capability now used on certain models of Motorola and Uniden radios in the GMRS. We also recommend this for consideration.

PRSG, Kobb and Simpson all recommended that the Commission prohibit FRS radios from having any method for external or remote transmitter keying. Kobb further documented the ready available of home-brew and after-market "instant repeater" kits that could transform any receiver

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55 PRSG comments at p. 9.

56 Comments by Anchorage at p. 2.

57 See comments by Anchorage, Boakes, REACT and Simpson.

or transceiver, coupled to any FRS transmitter or FRS transceiver, into a frequency-duplexed or time-multiplexed repeater station.

To discourage FRS broadcasting of music or the transmission of "dead" (unmodulated) carriers, PRSG recommends requiring that FRS transmitters employ the signal-processing software to detect such undesirable use, and to temporarily disable the FRS transmitter if such modulation (or continuous lack thereof) is detected.

Kobb pleaded that FRS must not impede technological development in either the FRS or the GMRS. We concur, but we must also note that the mere existence of the FRS in current GMRS spectrum would inhibit the development of advanced, multi-node GMRS repeater network design.

X. Commenters Recommend Alternative Spectrum for FRS.

More than two dozen commenters[58], more than a *third* of all parties commenting on this *NPRM*, recommended alternative spectrum for the proposed FRS. These were not just attempts to deflect FRS away from GMRS spectrum, and several parties discussed the distinct advantages of these alternatives. There was nearly unanimous consensus that the Commission should place FRS instead in spectrum already designated for Part 15 use by unlicensed devices. Commenters especially recommended the 915 MHz and 2.4 GHz bands for consideration, citing such factors as improved building penetration[59], greater security and privacy of communications by using spread-spectrum technology[60], and potential collocation or adjacent location to PCS service offerings.

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58 See comments by Anchorage, Betz, Brown, Campbell, Chin, Cochran, Collier, Conway, Douglas County, Frair, Kipp, Leef, Masterson, Neil, Pearce, Riechel, Robeson, Silver, Smith, Sylvia, Troy, Tudor, Weiss and Withers.

59 See comments by Silver at pp. 2-3.

60 PRSG comments at p. 3.

> "If an FRS can be located in radio spectrum near the frequencies of in-development PCS, units could be designed that would operation in *both* services from a *single* unit. Thus, the user would have the capability to enjoy both the sophisticated alternatives available to PCS users and short distance, person to person communications in a single, person carried unit. This combination would go a long way to filling the needs of the mobile citizen while, at the same time, *eliminating the need to carry multiple radios!*"
>
> — Comments of REACT at p. 11.

PRSG concurs with this recommendation. It would also make the PCS and FRS equipment much more attractive to the individual consumer, an even further encouragement for rapid development and marketing of these new technologies.

XI. The Relevance of the "Refarming Docket" to GMRS.

As previously mentioned, several parties commented on alternative FRS channelization schemes.[61] They and others (such as Boakes and Motorola) occasionally refer to technologies and technical standards that are the subject of the "refarming docket."[62]

The basic problem in incorporating concepts and standards that the FCC has implemented in the "refarming docket" is that the FCC chose specifically to *exclude* the GMRS from these considerations. This was not a mere accident or typographical oversight, but a deliberate decision. FCC staff have told PRSG representatives that they envision *no* circumstances under which the GMRS would be added or included in this other important proceeding.

Even without the existence of the FRS *NPRM*, this suggests that the FCC intends to lock the GMRS into the existing analog NBFM technology, without hope of benefiting from the efficiencies of new technologies or being able to participate in the decision-making process of how they might better or more uniquely be implemented in the GMRS.

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61 See for instance, comments by Feit, McKenna and Tumser.

62 "Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Services," PR Docket No. 92-235, June 15, 1995.

Moreover, Tandy accused the GMRS user community[63] of not developing and presenting such "a comprehensive plan for a new evolutionary step in GMRS repeater usage."[64] Tandy's claim ignored that the pendency of refarming and the pending availability of refarmed radios has tremendous relevance to the GMRS community, and it would have been quite premature to propose a new repeater schemes while those matters were still under FCC and industry review.

The FCC's change in position established in that *Report and Order*, no longer to reserve the 467 MHz interstitial frequencies for enhanced repeater and network use, constituted a change in formal policy without benefit of an opportunity for public comment on any Rules change in Subpart 95-A.

XI.1. The *NPRM* Fails to Propose Changes to the GMRS Rules.

The FRS *NPRM* proposes no rules changes whatsoever to Subpart A of Part 95. The Commission's existing *formal* policy is that the 467 MHz GMRS interstitial frequencies will be preserved

> "(i)n order to maximize the options of the GMRS community to present us a comprehensive plan for a new evolutionary step in GMRS repeater usage . . . ."
>
> — *Report and Order*, PR Docket 87-265 at ¶63.

In the Part 90 services, proposals to implement channel splitting, as part of a general multiple-stage plan to increase spectrum efficiency and capacity, were presented *in formal rule-making actions* that proposed *specific modifications* in the rules governing the particular services affected. The FCC has proposed *no such change* in the GMRS rules, but many GMRS licensees (in particular, the operators of many GMRS repeater stations) will now have to replace existing equipment with new equipment employing tighter technical operating parameters, so as to avoid or at least to minimize interference from FRS transmitters operating in the 467 MHz band.

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63 See the Tandy *Petition*, p. 7 at footnote 12.

64 *Report and Order*, PR Docket 87-265 at ¶63.

This comes without the FCC having proposed any changes *in the GMRS rules themselves*, and without benefit of or opportunity for public comment on such changes *in GMRS Rules*.

These unannounced but *de facto* mandated technical changes, will impose hardship on many GMRS repeater operators. Several parties complained about this hardship.[65]

We believe that this failure to propose changes in existing FCC rules governing the technological requirements of stations operating in the GMRS constitutes *a fundamental and fatal flaw* in this *NPRM*. The FCC will have taken this action unilaterally, without formal proposal for changes in the Subpart 95-A Rules, and without opportunity for public comment to such changes in the Subpart 95-A Rules, in violation of the provisions of the Administrative Procedures Act.

XII. Summary.

Commenters found significant technical errors and inconsistencies in the Family Radio Service as proposed in the *NPRM*. Creation of the FRS merely as proposed in the *NPRM* will have a deleterious and irreversibly negative impact on licensed GMRS operations. Substantial changes in technology and additional operating constraints for FRS transmitters are imperative.

Lacking a well-documented or soundly rational need to use the interstitial frequencies in the GMRS 467 MHz band, the FRS should be permitted to operate *only* on the proposed 462 MHz GMRS frequencies.

Significant interference and user behavior problems could be avoided if the FRS were located not in the GMRS spectrum at 460 MHz, but in higher Part 15 spectrum already available and inherently more suitable and appropriate for the intended FRS.

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65 See, for example, comments by Anchorage, Baker, Boakes, Cameron, and Ron Howe.